

REMARKS

Claims 1-10 and 12-19 are pending in this application, claim 11 is withdrawn from consideration as a result of the examiner's restriction requirement. Claims 2 and 8 have been rejected under 35 USC §112. Claims 1, 2 and 5-10 have been rejected under 35 USC §102 in view of Schultz (US 5,985,356). Additionally, the examiner has rejected claims 3 and 4 under 35 USC §103 in view of a combination of different references. First, the examiner has rejected claim 3 in view of Schultz, Stylli (US 5,985,214) and Carl (US 5,226,462). Second, the examiner has rejected claim 4 in view of Schultz, Stylli and Turner (US 6,508,984).

1. Response to rejection under 35 USC §112

The examiner has rejected claims 2 and 8 under 35 USC §112, second paragraph as indefinite. The examiner argues that claim 2 is indefinite because it is "unclear what is being charged vertically from above." (Office Action of October 27, 2003, p. 3). However, applicants assert that the language of claim 2 is definite. The test of definiteness is whether the scope of the claim is clear to a hypothetical person possessing the ordinary level of skill in the pertinent art. MPEP §2171. The claim language of claim 2 specifically says "the sheet-like substrate is arranged horizontally and is charged vertically from above." Applicants assert that one of ordinary skill in the art would understand that the sheet-like substrate is loaded from above. (Spec. p.3, lines 1-3).

The specification discloses that any suitable dispensing devices which allow the

release of individual suspension drops can be employed in accordance with the invention, preferably carried out by displacing movable plungers in the dispensing device. (Spec. p. 3, lines 5-7). These dispensing devices are arranged essentially perpendicular or angled to the substrate so that the material samples flow in a perpendicular or angled way to the substrate. This relationship allows the release of individual suspension drops onto the same point of the substrate and prevents dispensed suspension drops from coalescing on the substrate. (Spec. p. 4, lines 15-18).

When the dispensing device is not arranged perpendicular or angled to the sheet-like substrate, coalescing of the drops is unavoidable because the resulting diameter of the flow is larger than a perpendicular arrangement. Even if the dispensing device is not arranged perpendicular or angled to the sheet-like substrate and coalescing of the material is avoided, the separations between the samples have to be extended to the capacity of the sheet-like substrate is reduced. Furthermore, "charge" is defined in the dictionary as: (a) to put a load on or in; to load or fill to usual capacity; (b) to load (a gun); (c) to fill (a substance) with another substance, etc. Webster's New Twentieth Century Dictionary, Second Edition (1983) (attached herewith). Accordingly, one of ordinary skill in the art would understand that the sheet-like substrate is loaded from above.

Additionally, the examiner has rejected claim 8 as indefinite because it is unclear whether the substrate is laid on a matrix plate with holes. Applicants assert that the

wording of claim 8 is clear in that it describes a matrix plate with holes laid on the sheet-like substrate. This results in one side of the sheet-like substrate being covered with the matrix plate. From this side, i.e. the side which is covered by the matrix plate, the suspensions are dispensed simultaneously or successively into the holes. Then the dispersion is partially dried and the matrix plate is lifted off. This prevents the suspension drops from coalescing on the substrate. Indeed, the examiner assumed that the matrix plate is laid on the sheet-like substrate for purposes of examination. (Office action of October 27, 2003, p. 4). Accordingly, one of ordinary skill in the art would understand that one side of the substrate has a matrix plate placed thereon and the suspensions are dispensed into the holes on this side. Therefore, applicants respectfully request the rejection be withdrawn.

2. Response to rejection under 35 USC §102

The examiner has rejected claims 1, 2, 5-10 under 35 USC §102(e) as anticipated in view of Schultz (US 5,985,356). The examiner argues that Schultz discloses a method for the preparation and use of a substrate with an array of diverse materials in predefined regions. However, the applicants argue that each and every claim limitation of claim 1, from which claims 2 and 5-10 depend, are not described by Schultz. A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference."

Verdegaal Bros. v. Union Oil Co. Of California, 814 F.2d 628, 631, 2 USPQ2d 1051,

1053 (Fed. Cir. 1987).

Schultz describes a method and an apparatus for the preparation and the use of a substrate having an array of diverse materials in predefined regions thereon. The substrate is prepared by delivering components of materials to predefined regions on a substrate and simultaneously reacting the components to form at least two materials. The substrate may be divided into individually defined positions spatially delimited from one another by distance, dimples, wells, raised regions, etched trenches etc. in order to prevent reactant components from diffusing into other reaction regions.

Schultz differs from the instant invention in that it does not require the material samples to be produced “in the surface regions” of the substrate. The instant specification describes this limitation as meaning the materials are formed on a sheet-like substrate with the dispensed material component not penetrating into the substrate, or at a maximum penetration of 100 μm . (Spec. p. 3, lines 29-35). In contrast, Schultz describes the substrate as “any conceivable substrate.” Column 11, line 45. Including, organic, inorganic, biological, nonbiological, or a combination of any of these existing as particles, strands, precipitates, gels, sheets, tubing, spheres, containers, capillaries, pads, slices, films, plates, slides, etc. (Column 11, lines 45-50). Moreover, Schultz describes that the substrate surface can contain an adsorbent to which the components of the test materials are to be delivered. (Col. 11, lines 66-67; Col. 12, line 1). Accordingly, Schultz does not describe material samples in the surface regions of the substrate in order to anticipate claim 1 of the instant invention.

3. Response to rejection under 35 USC §103

The examiner has rejected claim 3 under 35 USC §103(a) in view of Schultz, Stylli or Carl. However, as discussed below with regard to the specific references the examiner has failed to establish a *prima facie* case of obviousness with respect to the instant invention. Three requirements must be fulfilled in order for a *prima facie* case of obviousness to be satisfied. First, there must be some suggestion or motivation in the references themselves or available to one of ordinary skill in the art to modify the reference or to combine reference teachings.¹ Second, there must be a reasonable expectation of success. Third, the prior art references combined must teach or suggest all the claim limitations. MPEP §2143. Both the suggestion to carry out the claimed process and the reasonable expectation of success must be found in the prior art and not based on the applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438, 1442 (Fed. Cir. 1991). Additionally, the level of ordinary skill in the art cannot be relied upon to provide the suggestion to combine references. *Al-Site Corp. v. VSI Int'l Inc.* 174 F.3d 1308, 50 USPQ2d 1161, 1171 (Fed. Cir. 1999). With respect to the instant application the examiner has failed to meet this burden.

As discussed above, Schultz does not describe all the limitations of claim 1. Specifically, Schultz does not describe that the material samples are produced in the surface regions of the substrate. Furthermore, Stylli nor Carl render this limitation

¹There are three possible sources for motivation to combine references: the nature of the problem to be solved, the teachings of the prior art, and the knowledge of persons of ordinary skill in the art. *In re Rouffet*, 149 F.3d 1350, 1357, 47 USPQ2d 1453, 1457-1458 (Fed. Cir. 1998).

obvious. The examiner argues that Stylli discloses nanoliter dispensers operated by a piston driven by a motor or gas bottle. Stylli describes systems and methods that utilize automated and integratable workstations for identifying chemicals having useful activities. (Stylli Abstract) The examiner cites Column 16, lines 11-28 and column 60, lines 43-48, in support of the obviousness rejection. These two sections address a piston driven by a motor or gas bottle. Accordingly, the examiner has not indicated how the description provided by Styli in combination with Schultz renders the instant invention obvious. The examiner argues that Schultz does not describe a plunger and therefore the combination of Schultz and Styli render the instant invention obvious. However, the combination of Schultz and Styli does not describe the surface region of a sheet-like substrate limitation of claim 1, from which claim 3 depends.

The examiner further argues that Carl discloses a dispenser in which dispensing is carried out by pistons and cylinders in the dispenser for producing accurate, precise, and adjustable amounts of liquid. The examiner cites Carl to disclose the same element for which the examiner has cited Styli. Therefore, the combination of Schultz, Styli and Carl do not render the instant invention obvious. Accordingly, as the combination of references does not describe each and every element of the claims, a *prima facie* case of obviousness has not been established.

Furthermore, the examiner has rejected claim 4 in view of Schultz, Styli and Turner. Claim 4 is also dependent from claim 1. Accordingly, applicants arguments with respect to the previous rejections also apply to this rejection. However, the

addition of the Turner reference does not render the instant rejection obvious. The examiner argues that while Schultz does not disclose that the dispensable material components are dispensed and mixed on an auxiliary substrate prior to being taken up by a dispensing device, the combination of Styli and Turner renders this obvious. The examiner argues that Styli discloses generating daughter plates from master plates of stock solutions using a dispensing device and that the daughter plate may contain dilutions of stock solutions. The examiner also argues that Turner describes daughter ligand libraries generated from a parent ligand library and metal precursors added to daughter ligand libraries to generate daughter catalyst libraries in which product libraries may be generated. However, this description does not describe the instant invention.

Turner describes the preparation of the metal precursor in a reaction vessel. The specification describes, "the ligand member may be added to a reaction vessel at the same time as the metal or metal precursory compound along with additional reactants in the reaction of interest." Col. 7, lines 65-68; Col. 8, lines 1-2. Thus, the combinatorial library is not produced on a substrate as claimed in claim 4. Indeed it appears that the combinatorial library is prepared in a reaction vessel because the catalysts of Turner have to be prepared in solution. The Example in Turner describes the materials in solution and the reacted using a separate reactor vessel. Col. 20, lines 17-67. Accordingly, one of ordinary skill in the art would not think it obvious to use the sheet like substrate of the instant invention in view of Turner that utilizes reaction

vessels in order to react catalyst components in solution. Accordingly, applicants respectfully request the rejection be withdrawn and the claims be passed to issue.

A check for \$ 420.00 is attached. Please charge any shortage in fees due in connection with the filing of this paper, including Extension of Time fees to Deposit Account No. 11-0345. Please credit any excess fees to such deposit account.

Respectfully submitted,

KEIL & WEINKAUF

A handwritten signature in black ink, appearing to read 'Lesley E. Shaw', is written over the printed name.

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